

Appl. No. 10/523,534; Docket No. NL02 0759 US
Amdt. dated April 10, 2006
Response to Office Action dated February 14, 2006

REMARKS/ARGUMENTS

Claims 1-18 are pending in the present application.

Claims 1, 4, 5 and 7-18 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Hu et al.* (U.S. Patent 6,467,278 B1) in view of *Suzuki* (U.S. Patent 6,4010,705 B1).

Claims 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over *Hu et al.* (U.S. Patent 6,467,278 B1) in view of *Suzuki* (U.S. Patent 6,4010,705 B1) as applied to claims 1, 4, 5, and 7-18, and further in view of *Jacobs et al.* (U.S. Patent 5,372,220).

Applicants respectfully traverse the rejections.

The References

Hu is directed to "a cooling system to reduce damage resulting from panel singulation is provided. A panel may be formed by encapsulating a lead frame with mounted dice. The encapsulating material may be a composite, plastic, or ceramic. Singulation may be a cutting done by laser, water jet, or saw. A chiller system cools a fluid, such as water, to a temperature below 16.degree. C. The cooled fluid is dispensed to a part of the panel being singulated. For example, if a circular saw is used to cut the panel, a plurality of nozzles may be used to direct the fluid to the part of the saw cutting the panel, which defines the part of the panel being singulated. The cooled fluid, cools the panel preventing burring, smearing, and melting of metal contacts (Abstract)."

Suzuki is directed to "The present invention relates to a diamond blade for cutting and to a method of manufacturing the same, and more particularly to a diamond blade used for *cutting stone, concrete*, [emphasis added] or any other workpiece, as well as to a method of manufacturing the same. A blade used for cutting a hard material such as stone or concrete consists of a circular base plate, and a layer of super abrasive grains, such as diamond abrasive grains or CBN abrasive grains, which is bonded to the outer circumferential edge of the base plate through direct sintering, brazing, welding (col. 1, lines 1-15)."

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Claims 1, 4, 5 and 7-18

Applicants believe that the references alone or combination do not teach the claimed features of their invention. The feature of "a friction force reducing cooling fluid is applied during the singulation step by means of the dicing blade," is not taught by the combination.

Hu does not discuss the use of a dicing blade comprising diamond grains. The combination with *Suzuki* does not overcome this deficiency. Furthermore, the combination is improper. *Suzuki* is directed to the cutting of stone and concrete. Such an application is not applicable to the slicing and singulation process of semiconductor device packaging. A *Suzuki* blade as characterized in the reference would not be appropriate to semiconductor manufacturing.

Suzuki's diamond blade is not applicable to Applicants' invention. Modifying *Suzuki* with *Hu* to obtain the features of Applicants' invention vitiates the intent of *Suzuki*. The CCPA and the Federal Circuit have consistently held that when a §103 rejection is based upon a modification of a reference that destroys the intent, purpose, or function of the invention disclosed in the reference, such a proposed modification is not proper and the *prima facie* case of obviousness cannot be properly made. Case law has further established that:

Obviousness cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching, suggestion or incentive supporting the combination. *ACS Hospital Systems Inc. v. Montefiore Hospital*, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984)

Alone or in combination, *Suzuki* and *Hu* do not teach Applicants' invention. Furthermore, MPEP §2143.01 provides:

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir 1990)

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Applicants' request that the 103 rejections of claims 1, 4, 5 and 7-18 based on *Hu* and *Suzuki* be withdrawn. Therefore, in that independent claim 1 is allowable, the dependent claims 4, 5, and 7-18 are also allowable.

Claims 2, 3, and 6

Applicants assert that the combination of *Suzuki* and *Hu* being insufficient to suggest or teach their invention, the further combination with *Jacobs* does overcome this insufficiency with respect to claim 2.

Jacobs is directed to "a method of formulating a nonflammable water based lubricant emulsion having excellent anti-seize and low friction properties for wood cutting and metal machining containing preferably an oil-in-water emulsion and finely divided polytetrafluoroethylene particles in the water phase and delivered in small amounts by mist or spray to the working parts (Abstract)."

The Office Action's assertion in dependent claims 3 and 6, that the ranges as claimed are a result of routine experimentation is not supported. "The sharp cleaving diamond grains are advantageously applied with a size in the range from 20 to 60 micrometers. An emulsion of a sawing oil in water is advantageously used as the friction force reducing cooling fluid, the sawing oil having the function of reducing the friction forces being applied with advantage in a volume percentage in the range from 1 to 10. Natural sharp cleaving diamond grains are advantageously used as the diamond grains. As metal carrier advantageously a ductile metal carrier is applied, such as a copper carrier (Specification, page 4, lines 5-10)."

Applicants assert that a long-felt need for the size range of the diamond grains and the volume percentage is met and applicable to a particular package type. That is, "a substantial part of all packaged semiconductor devices is formed from a copper carrier provided with terminals (the so-called (HV)Quad Flat No-lead package), on which copper carrier at least one semiconductor device is present, the bond pads of which being electrically connected to the terminals by means of wire-bonded

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connections. The semiconductor device(s) and wire-bonded connections are provided with an encapsulation, usually being a glass-filled epoxy (Specification page 1, lines 1-5)."

In light of the arguments presented, Applicants assert that claim 2, 3, and 6 are allowable.

Conclusion

Applicants believed they have addressed the Examiner's concerns. A Notice of Allowance is earnestly requested.

The Commissioner is hereby requested and authorized pursuant to 37 CFR §1.136(a)(3), to treat any concurrent or future reply in this application requiring a petition for extension of time for its timely submission, as incorporating a petition for extension of time for the appropriate length of time. Please charge any additional fees which may now or in the future be required in this application, including extension of time fees, but excluding the issue fee unless explicitly requested to do so, and credit any overpayment, to Deposit Account No. 14-1270.

Respectfully submitted,

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